A1 cont

41. (New) The kit of claims 19 or 20, wherein at least two probes are fixed to a solid support.

42. (New) The kit of claims 19 or 20, further comprising a means for detecting hybrids resulting from hybridization of at least one of the two probes to the sample.--

REMARKS

I. Status of the Claims and Rationale for the Amendment

The parent application, U.S. Patent Application Serial No. 09/580,794, was allowed on April 23, 2001 but has not yet issued.

The specification has been amended to recite the relationship with the parent cases and to incorporate formalities required by the examiner in the parent case. Support for the paragraphs inserted at page 5, line 7, is found at page 18, line 30 through page 21, line 2 of the original Specification. The paragraph at page 23, lines 9-27 has been amended to reflect the correct SEQ ID Nos. A marked up version of the replacement paragraph at page 23, lines 9-27 is shown in the attached **Marked Up Version of the Specification**. Support for the Abstract added to page 47 is found on the cover page of the original application PCT/EP97/00211.

The active claims in this case are claims 15-42. Claims 15 and 16 are amended. The new claims 17-42 are directed to kits containing primers and probes corresponding to the allowed claims of Serial No. 09/580,794 and Patent No. 6,087,093. **A Marked Up Set of Claim Amendments** is attached.

II. Sequence Listing

Also transmitted herewith is a diskette containing the computer readable form of those sequences in the specification, a verified statement in accordance with the sequence rules, and a separate paper copy of the sequence listing.

It is believed that no fee is due; however, should any fees under 37 C.F.R. §§ 1.16 to 1.21 be required for any reason, the Commissioner is authorized to deduct said fees from Deposit Account No. 01-2508/11362.0008.DVUS02.

Respectfully submitted,

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Date: August 31, 2001

MARKED UP SET OF REPLACEMENT PARAGRAPHS

Page 23, lines 9-27:

For cDNA synthesis and PCR amplification, the RNA pellet was dissolved in 15 μl random primers (20 ng/μl, pdN_6, Pharmacia), prepared in DEPC-treated or HPLC grade water. After denaturation at 70°C for 10 minutes, 5 μl cDNA mix was added, composed of 4 μl 5x AMV-RT buffer (250mM Tris.HC1 pH 8.5, 100mM KC1, 30mM $MgCl_2$, 25 mM DTT), 0.4 μL 25mM dXTPs, 0.2 μl or 25U Ribonuclease Inhibitor (HPRI, Amersham), and 0.3 μl or 8U AMV-RT (Stratagene). CDNA synthesis occurred during the 90 minutes incubation at 42°C. The HIV RT gene was then amplified using the following reaction mixture. 5 μl cDNA, 4.5 μl 10x Taq buffer, 0.3 μl 25 mM dXTPs, 1 μl (10 pmol) of each PCR primer, 38 μl H_2O, and 0.2 μl (1 U) Taq. The primers for amplification had the following sequence: outer sense RT-9: 5' bio-GTACAGTATTAGTAGGACCTACACCTGTC 3' (SEQ ID NO ~~96~~ **162**); nested sense RT-1: 5' bio-CCAAAAGTTAAACAATGGCCATTGACAGA 3' (SEQ ID NO ~~97~~ **163**); nested antisense RT-4: 5' bio-AGTTCATAACCCATCCAAAG 3' (SEQ ID NO ~~98~~ **164**); and outer antisense primer RT-12: 5' bio-ATCAGGATGGAGTTCATAACCCATCCA 3' (SEQ ID NO ~~99~~ **39**). Annealing occurred at 57°C, extension at 72°C and denaturation at 94°C. Each step of the cycle took 1 minute, the outer PCR contained 40 cycles, the nested round 35. Nested round PCR products were analysed on agarose gel and only clearly visible amplification products were used in the LiPA procedure. Quantification of viral RNA was obtained with the HIV Monitor™test (Roche, Brussels, Belgium).

MARKED UP SET OF CLAIM AMENDMENTS

15. (Amended) A kit for inferring the nucleotide sequence at codons of interest in the HIV RT gene and/or the amino acids corresponding to these codons and/or the antiviral drug resistance spectrum of HIV isolates present in a biological sample comprising the following components:

(i) [when appropriate] optionally, a means for releasing, isolating or concentrating the polynucleic acids present in said sample;

(ii) [when appropriate] optionally, at least one [of the above-defined] suitable set of primers;

(iii) [at least two of the probes as defined above, possibly fixed to a solid support] at least two different probes, wherein each probe is capable of hybridizing specifically to one or more target codons within any region I to VIII as represented in Figure 1, said probes optionally fixed to a solid support;

(iv) a hybridization buffer, or components necessary for producing said buffer;

(v) a wash solution, or components necessary for producing said solution;

(vi) [when appropriate] optionally, a means for detecting the hybrids resulting from the preceding hybridization;

(vii) [when appropriate] optionally, a means for attaching said probe to a solid support.

16. (Amended) A kit for inferring the HIV RT resistance spectrum of HIV in a biological sample, coupled to the identification of the HIV isolate involved, comprising the following components:

(i) [when appropriate] optionally, a means for releasing, isolating or concentrating the polynucleic acids present in said sample;

(ii) [when appropriate] optionally, at least one [of the above-defined] suitable set of primers;

(iii) [at least two of the probes as defined above, possibly fixed to a solid support] at least two different probes, wherein each probe is capable of hybridizing

specifically to one or more target codons within any region I to VIII as represented in Figure 1, said probes optionally fixed to a solid support;

(iv) a hybridization buffer, or components necessary for producing said buffer;

(v) a wash solution, or components necessary for producing said solution;

(vi) [when appropriate] optionally, a means for detecting the hybrids resulting from the preceding hybridization;

(vii) [when appropriate] optionally, a means for attaching said probe to a solid support.

17. (New) The kit according to claims 15 or 16, wherein the primer is selected from the group consisting of SEQ ID No: 162, 163, 164 and 39.

18. (New) The kit according to claims 15 or 16, wherein the set of primers is selected from the group consisting of

SEQ ID No: 162 and 163, and

SEQ ID No: 164 and 39.

19. (New) A kit for inferring the nucleotide sequence at codons of interest in the HIV RT gene and/or the amino acids corresponding to these codons and/or the antiviral drug resistance spectrum of HIV isolates present in a biological sample, the kit comprising the following components:

at least two different probes, wherein the probes are selected from the group consisting of

SEQ ID NO: 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 30, 31, 32, 33, 34, 35, 37, 40, 41, 44, 45, 46, 47, 48, 49, 50, 51, 52, 54, 55, 56, 57, 58, 59, 61, 62, 63, 64, 65, 66, 67, 68, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 114, 115, 117, 118, 119, 120, 121, 122, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 138, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 154, 155, 156, 157 and 159;

a hybridization buffer, or components necessary for producing said buffer; and

a wash solution, or components necessary for producing said solution.

21. (New) A kit for inferring the HIV RT resistance spectrum of HIV in a biological sample, coupled to the identification of the HIV isolate involved, comprising the following components:

at least two different probes, wherein the probes are selected from the group consisting of

SEQ ID NO: 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 30, 31, 32, 33, 34, 35, 37, 40, 41, 44, 45, 46, 47, 48, 49, 50, 51, 52, 54, 55, 56, 57, 58, 59, 61, 62, 63, 64, 65, 66, 67, 68, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 114, 115, 117, 118, 119, 120, 121, 122, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 138, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 154, 155, 156, 157 and 159;

a hybridization buffer, or components necessary for producing said buffer; and

a wash solution, or components necessary for producing said solution.

21. (New) The kit according to any one of claims 15, 16, 19 or 20 wherein the probes are selected from the group consisting of SEQ ID NO: 4, 8, 9, 10, 11, 12, 13, 14, 15, 19, 21, 22, 24, 25, 27, 28, 30, 31, 32, 33, 34, 35, 40, 46, 48, 49, 50, 51, 52, 54, 55, 56, 57, 58, 70, 72, 73, 75, 76, 78, 79, 80, 81, 82, 83, 86, 88, 90, 93, 95, 96, 97, 98, 99, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 115, 117, 118, 119, 120, 121, 122, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 138, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 154, 155, 157 and 159.

22. (New) The kit according to any one claims 15, 16, 19 or 20 wherein at least one of the probes is selected from the group consisting of SEQ ID NO: 4, 8, 9, 10, 11, 12, 13, 14, 15, 19, 21, 22, 24, 25, 27 and 28.

23. (New) The kit according to any one of claims 15, 16, 19 or 20 wherein at least one of the probes is selected from the group consisting of SEQ ID NO: 30, 31, 32, and 33.

24. (New) The kit according to any one of claims 15, 16, 19 or 20 wherein at least one of the probes is selected from the group consisting of SEQ ID NO: 34, 35, 40, 46, 48, 49, 50, 51 and 52.

25. (New) The kit according to any one of claims 15, 16, 19 or 20 wherein at least one of the probes is selected from the group consisting of SEQ ID NO: 57 and 58.

26. (New) The kit according to any one of claims 15, 16, 19 or 20 wherein at least one of the probes is selected from the group consisting of SEQ ID NO: 70, 72, 73, 75, 76, 78, 79, 80, 81, 82 and 83.

27. (New) The kit according to any one of claims 15, 16, 19 or 20 wherein at least one of the probes is selected from the group consisting of SEQ ID NO: 86, 88, 90, 93, 95, 96, 97, 98, 99, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 115, 117, 118, 119, 120, 121, 122, 124, 125, 126, 127, 128, 130, 131, 132, 133, 134, 135 and 136.

28. (New) The kit according to any one of claims 15, 16, 19 or 20 wherein at least one of the probes is selected from the group consisting of SEQ ID NO: 138, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 154, 155, 157 and 159.

29. (New) The kit according to any one of claims 15, 16, 19 or 20 wherein at least one of the probes is selected from the group consisting of SEQ ID NO: 5, 6, 7, 16, 17, 18, 20, 23, 26, 37, 41, 44, 45, 47, 54, 55, 56, 59, 61, 62, 63, 64, 65, 66, 67, 68, 71, 74, 77, 84, 85, 87, 89, 91, 92, 94, 100, 114, 128, 129, 138 and 156.

30. (New) The kit according to any one of claims 15, 16, 19 or 20 wherein at least one of the probes is selected from the group consisting of SEQ ID NO: 5, 6, 7, 16, 17, 18, 20, 23 and 26.

31. (New) The kit according to any one of claims 15, 16, 19 or 20 wherein at least one of the probes is selected from the group consisting of SEQ ID NO: 37, 41, 44, 45 and 47.

32. (New) The kit according to any one of claims 15, 16, 19 or 20 wherein at least one of the probes is selected from the group consisting of SEQ ID NO: 54, 55, 56 and 59.

33. (New) The kit according to any one of claims 15, 16, 19 or 20 wherein at least one of the probes is selected from the group consisting of SEQ ID NO: 61, 62, 63 and 64.

34. (New) The kit according to any one of claims 15, 16, 19 or 20 wherein at least one of the probes is selected from the group consisting of SEQ ID NO: 65, 66, 67, 68, 71, 74, 77 and 84.

35. (New) The kit according to any one of claims 15, 16, 19 or 20 wherein at least one of the probes is selected from the group consisting of SEQ ID NO: 85, 87, 89, 91, 92, 94, 100, 114, 128 and 129.

36. (New) The kit according to any one of claims 15, 16, 19 or 20 wherein at least one of the probes is selected from the group consisting of SEQ ID NO: 138 and 156.

37. (New) The kit of claims 19 or 20, further comprising a means for releasing, isolating, or concentrating polynucleic acids present in the sample.

38. (New) The kit of claims 19 or 20, further comprising at least one suitable set of primers.

39. (New) The kit according to claim 38, wherein the primer is selected from the group consisting of SEQ ID No: 162, 163, 164 and 39.

40. (New) The kit according to claim 38, wherein the set of primers is selected from the group consisting of

SEQ ID No: 162 and 163, and

SEQ ID No: 164 and 39.

41. (New) The kit of claims 19 or 20, wherein at least two probes are fixed to a solid support.

42. (New) The kit of claims 19 or 20, further comprising a means for detecting hybrids resulting from hybridization of at least one of the two probes to the sample.